

IN THE CLAIMS

1. (Currently Amended) A foam-in-bag dispenser system, comprising:
a film supply support;
a film feeding device for drawing film from a film source supported on said film supply support;
a dispenser having a foam material outlet;
a bag forming apparatus which forms bags for receiving the foam material output of the dispenser, and wherein

said dispenser comprises a mixing module which receives a foam precursor chemical and a dispenser housing which ~~internally receives~~supports said mixing module and is in contact with film being drawn past said housing by said film feeding device, and said housing being dimensioned as to present a smooth, wrinkle avoidance contact surface over all areas of film contact with said housing, and wherein said housing is positioned relative to film travel such that opposing, interior web surfaces of the film diverge to opposite sides of an upstream end of said housing and slide, in contact, along respective planar front and back side walls of said housing, and wherein said dispenser housing is positioned such that an interior edge region of the interior web surfaces runs along and in contact with said planar front and back side wall surfaces of the film.

2. (Previously Presented) The system of claim 1 wherein the upstream end of said housing includes a diverging outward upper edge portion and said front and back side walls are planar side walls of said housing that extend directly off and continuously down from respective opposite ends of said diverging outward upper edge portion.

3. (Previously Presented) The system of claim 1 further comprising a dispenser housing support which supports said dispenser housing so as to have a fixed interior end and a free outward end.

4. (Previously Presented) The system of claim 1 wherein said film feeding device includes a source of C-fold film and feeds said C-fold film past said housing with a fold edge of said C-fold film positioned even farther outward, in a direction of elongation of said dispenser housing, of said outward end of said dispenser housing and with the opposite non-joined edges being located a distance outward, in the same direction of elongation of said dispenser housing, of the interior end of said housing .

5. (Original) The system of claim 4 wherein said film feeding device includes a nip roller set which receives film following passage downstream with respect to film feed travel of said housing and places in contact the non-joined edges for edge sealing purposes.

6. (Original) The system of claim 1 wherein said mixing module includes a reciprocating rod in a chemical outlet passage of said mixing module and said housing supports drive components of a drive transmission which is engaged with said rod for reciprocation within said mixing module.

7. (Original) The system of claim 6 wherein said drive transmission includes a sliding crank mechanism covered by said dispenser housing.

8. (Previously Presented) The system of claim 6 further comprising a motor in driving engagement with said drive transmission with said motor being positioned so as to be external to said housing and external to film passing in contact with said housing relative to a surface plane of the film.

9. (Previously Presented) The system of claim 1 wherein said housing includes a main housing portion which has outer walls representing said front and back side walls which form a majority of the planar surface area in contact with the film being fed past said housing.

10. (Previously Presented) The system as recited in claim 1 wherein said dispenser housing includes a free end housing section with said mixing module being releasably mounted at said free end housing section and said free end housing section having an access door which is adjustable between a closed, mixing module cover mode and an open mixing module access mode.

11. (Original) The system as recited in claim 10 wherein said access door is pivotably mounted for rotation between said cover mode and said access mode.

12. (Original) The system as recited in claim 11 wherein said free end housing section includes a fixed surface to which is connected a door closure and mixing module seal compression device which is adjustably mounted for movement between a compression on access door state and a non-compression on access door state.

13. (Original) The system as recited in claim 12 wherein said door closure and mixing module seal compression device comprises an over center toggle clamp.

14. (Original) The system as recited in claim 13 wherein said overcenter toggle clamp includes means for adjusting full toggle closure compression level on said door.

15. (Original) The system as recited in claim 10 wherein said housing and mixing module include male/female position mount means for positioning said mixing module in a proper location prior to door closure covering.

16. (Original) The system as recited in claim 1 further comprising a chemical inlet manifold and a dispenser housing support which supports said dispenser housing so as to have a fixed interior end and a free outward end, and wherein said fixed interior end is in chemical flow communication with said inlet manifold and said housing has first and second chemical passageways formed therein and extending from said inlet manifold to outlet port holes positioned for fluid communication with inlet ports formed in said mixing module when supported in said housing.

17. (Original) The system as recited in claim 16 wherein said mixing module has inlet port projections which are sized for retention of seals which stay fixed to said mixing module and form a sealing relationship with the outlet ports of said chemical passageways formed in said housing.

18. (Original) The system as recited in claim 17 further comprising a solvent passage hole in said manifold and a solvent passageway in said dispenser housing having a solvent outlet port positioned for solvent feed to said solvent passage hole of said mixing module when mounted on said dispenser housing.

19. (Original) The system as recited in claim 18 further comprising a heater reception passageway formed in said dispenser housing and positioned within two inches of each of said dispenser housing chemical and solvent passageways.

20. (Original) The system as recited in claim 19 further comprising an inlet manifold heater positioned in said inlet manifold.

21. (Original) The system as recited in claim 16 further comprising manifold flow shut off valves, pressure transducers for a monitoring pressure levels of chemical being fed to said dispenser housing and filter units supported by said inlet manifold and said dispenser housing encompassing a portion of a drive system for reciprocating the end rod of said mixing module and said drive system including a drive motor, and wherein each of said shut off valves, drive motor, filter units, and transducers are spaced a distance inwardly away, in a direction of elongation of the housing, from an interior edge of the film being fed past said housing so as to avoid foam contact therewith.

22. (Previously Presented) The system as recited in claim 16 further comprising a heater reception passageway formed in said dispenser housing and positioned so as to extend adjacent and in a common direction of elongation of said dispenser housing

chemical passageways and within two inches of each of said dispenser housing chemical passageways.

23.(Previously Presented) The system of claim 1 wherein said mixing module has a module housing within which is positioned a mixing chamber with a rod reception passageway and at least one chemical inlet passage opening into said rod reception passageway, said mixing module further comprising a rod which is received for reciprocation in said rod passageway and has an engagement section; and

a drive mechanism, said drive mechanism including a motor and a drive transmission in driving communication with both said motor and said rod engagement section, said drive transmission including a crank and slider combination, and said drive transmission being contained in said dispenser housing.

24. (Previously Presented) The system as recited in claim 23 wherein said bag forming apparatus is positioned for receipt of chemical output by said mixing module for containment in said bag once formed.

25. (Previously Presented) The system as recited in claim 23 wherein said crank and slider combination include a crank member which is rotatably driven by said motor and which is connected to a first end of a crank connecting rod which crank connecting rod has a second end connected to a slider, and said crank and slide combination being positioned at a forward, dispensing end of said dispenser housing.

26. (Previously Presented) The system as recited in claim 25 wherein said slider is a piston member having a first end pivotably connected to said connecting rod and a separate end with an engager receiving said mixing module rod engagement section, and with said crank and slider mechanism being positioned above said mixing module at the forward dispensing end of said dispenser housing.

27. (Previously Presented) The system as recited in claim 26 wherein said piston is multi-walled and confined for linear travel by a pair of parallel slide walls.

28. (Previously Presented) The system as recited in claim 26 wherein said mixing module rod includes a main body which is free of any annular recessed areas along an axial length extending from a first free end to said mixing module rod engagement section, and wherein said engagement section is an expanded member relative to said main body which extends radial out to a greater extent than said main body at least at a border region between said main body and engagement section.

29. (Previously Presented) The system as recited in claim 28 wherein said engager of said piston includes a slotted recess with an enlarged area for receipt of said engagement section of said rod and a smaller recess for receipt of a portion of said main body.

30. (Previously Presented) The system as recited in claim 23 wherein said drive transmission includes a drive shaft which is driven by an output shaft of said motor and which is in driving communication with a crank mechanism of said crank and slide combination and received within said dispenser housing.

31. (Previously Presented) The system as recited in claim 30 wherein said crank mechanism comprises a first crank section and a second crank section releasably secured to said first crank section and having first and second crank extensions, and said support for said mixing module including a dispenser housing having a first bearing section and a second bearing section within which said first and second crank extensions are respectively received with at least one of said bearing sections being supported by a detachable section of said dispenser housing.

32. (Previously Presented) The system as recited in claim 31 wherein said crank and slide mechanism further includes a connecting rod and a piston as said slider with said connecting rod is pivotably joined to each of said piston and crank mechanism and said piston including means for releasable engagement with said mixing module rod and

said piston being confined for linear travel by a confining section of said dispenser housing.

33. (Previously Presented) The system as recited in claim 23 wherein said dispenser housing has a mixing module mounting section and a cover positionable over said mixing module upon receipt in said mounting section, and said motor being supported by said dispensing housing at an external location to said dispenser housing and said crank and slider mechanism being supported internally within said dispenser housing.

34. (Previously Presented) The system as recited in claim 33 wherein a main shaft extends through an axial passageway in said dispenser housing to an outward end of said dispenser housing and said crank mechanism converts rotation forces of said main shaft to linear reciprocation forces vertically aligned with a vertically mounted mixing module in said dispenser housing.

35. (Previously Presented) The system as recited in claim 23 further comprising means for monitoring a location of said mixing module rod within said mixing module.

36. (Previously Presented) The system as recited in claim 35 wherein said means for monitoring includes an encoder associated with said motor which is a DC brushless motor and said means for monitoring further comprising a processor for processing position data received by said encoder.

37. (Previously Presented) The system as recited in claim 36 further comprising a home position sensor which is in communication with said processor and positioned at a location which monitors a position of either said mixing module rod or a location of an object in said drive transmission.

38. (Previously Presented) The system as recited in claim 23 wherein said drive mechanism provides maximum drive output in unison with end points of reciprocation travel in said mixing module rod.

39. (Previously Presented) The system as recited in claim 38 wherein the maximum drive output is in excess of 1000 lbf at said end points which coincide with end points of travel in a slider of said crank and slider combination.

40. (Previously Presented) The system as recited in claim 23 wherein said drive transmission includes a one way clutch and a secondary transmission system for driving an addition component in said dispenser system with said motor, and said secondary transmission system being received within said dispenser housing.

41. (Previously Presented) The system as recited in claim 40 wherein said additional component is a cleaning brush drive system which is positioned for cleaning engagement with an outlet end of said mixing module.

42. (Cancelled)

43. (Previously Presented) A method of avoiding film wrinkling in the foam-in-bag dispensing system of claim 1 comprising feeding film past the dispenser housing supporting said mixing module which dispenser housing presents only smooth surface portions to web surfaces passing to opposite sides of said dispenser before coming back into contact in a nip roller feed device in said dispensing system for bag formation.

44. (Cancelled)

45. (Currently Amended) A foam-in-bag dispenser system, comprising:
a film supply support;
a film feeding device for drawing film from a film source supported on said film supply support;

a dispenser having a foam material outlet;
a bag forming apparatus which forms bags for receiving the foam material output of the dispenser, and wherein

said dispenser comprises a mixing module which receives a foam precursor chemical and a dispenser housing which ~~internally receives~~ supports said mixing module and is in contact with film being drawn past said housing by said film feeding device, and said housing having an outwardly diverging upper section and front and rear planar side walls extending down from respective front and rear ends of said outwardly diverging upper section and providing wrinkle avoidance contact surfaces to interior, front and rear film sections being drawn past and along and in contact with said front and rear planar side walls of said dispenser housing.

46. (Previously Presented) A foam-in-bag dispenser system, comprising:

a film supply support;
a film feeding device for drawing film from a film source supported on said film supply support;
a dispenser having a foam material outlet;
a bag forming apparatus which forms bags for receiving the foam material output of the dispenser, and wherein

said dispenser comprises a dispenser material module which receives a foam precursor chemical and a dispenser housing which internally receives said module and is in contact with film being drawn past said housing by said film feeding device, and said housing being dimensioned as to present smooth front and back contact surfaces relative to film webs of said film being separated by an upstream end of said housing and fed along and in contact with said front and back contact surfaces of said dispenser housing which extend off from the upstream end of said housing;

means for completing bag formation including end seal formation means which rejoins said webs together below said dispenser housing to form a bag end seal; and

a drive mechanism for opening and closing an outlet port in said module, said drive mechanism including a motor supported externally of said dispenser housing and a drive transmission received by said dispenser housing, and said dispenser housing being

supported in cantilever fashion such that an inner edge of film width falls between a free end of the cantilevered dispenser housing and said motor during film feed.

47. (Currently Amended) A foam-in-bag dispenser system, comprising:
a film feeding device for drawing film from a film source;
a dispenser having a foam material outlet;
a bag forming apparatus which forms bags for receiving the foam material output of the dispenser, and wherein

said dispenser comprises a dispenser housing which internally receives foam chemical precursor, and said dispenser housing being in contact with ~~with~~ interior surfaces of opposing film web sections of a film, with said film sections being drawn past said housing by said film feeding device so as to partially envelope said housing, and wherein a cross-sectional vertical plane extending through an edge sealer of said bag forming apparatus extends between the inner and outer ends of said dispenser housing, and said interior surfaces of opposing film web sections [[film]] being drawn over and in contact with a smooth surface region of said dispenser housing which avoids wrinkle formation in a region of the film that is aligned with edging of said film sections which are to be sealed by the edge sealer.

48. (Previously Presented) The dispenser system of claim 47 wherein the film being fed past said dispenser housing is C-fold film with a fold edge representing said outer edge and the opposite, non-fold edging of the C-fold film representing the inner edge and with the non-fold edging being positioned outward of the innermost edge of said dispenser housing so as to have the edging of said film sections to be edge sealed positioned outward of that innermost edge of said dispenser housing for promoting film contact with said smooth contact and underlying support region of said dispenser housing.

49. (Previously Presented) The dispenser system of claim 47 wherein said dispenser housing has a mixing module and a moving member which travels within a passageway of said mixing module and a motor for driving said moving member, and

said motor being positioned such that the inner edge of the film positioned closest to said motor falls outward of both the innermost edge of said dispenser housing and said motor.

50. (Previously Presented) The dispenser system of claim 46 wherein a cross-sectional plane extending through the edge sealer of said system extends between an inner end of said dispenser housing and said free end of said dispenser housing.

51. (Previously Presented) The dispenser system of claim 45 wherein said dispenser housing is designed such that said diverging upper section and front and rear planar side walls have a width that exceeds a width, relative to a common direction of width extension, of the film material being fed past said dispenser housing.